

14 JAN 2005

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
22 January 2004 (22.01.2004)

PCT

(10) International Publication Number
WO 2004/007217 A3

(51) International Patent Classification⁷: B60B 17/00

[DE/DE]; Ennestweg 7, 57399 Kirchhundem (DE).
DORNER, Heinz, Dieter [DE/DE]; Auf Dem Berg 36,
57647 Nistertal (DE).

(21) International Application Number: PCT/IB2003/003816

(74) Agents: AKERS, Noel, James et al.; Howrey Simon Arnold & White, CityPoint, One Ropemaker Street, London, EC2Y 9HS (GB).

(22) International Filing Date: 16 July 2003 (16.07.2003)

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,

(26) Publication Language: English

(30) Priority Data: 0216624.7 17 July 2002 (17.07.2002) GB

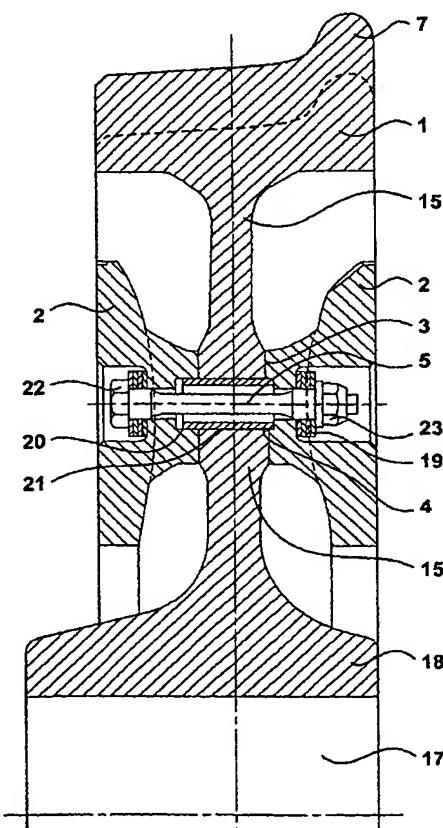
(71) Applicant (for all designated States except US): BOMBARDIER TRANSPORTATION GMBH [DE/DE]; Saatwomkler Da., 43, 13627 Berlin (DE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): BIEKER, Guido

[Continued on next page]

(54) Title: REDUCTION OF TORSIONAL VIBRATION IN RAIL VEHICLE WHEEL SETS





ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the international search report:
3 June 2004

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IB 03816A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B60B17/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 B60B F16F F16D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category ^o	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 1 765 477 A (ACKERMAN ELI O) 24 June 1930 (1930-06-24) column 2, line 60 - column 4, line 86; figures	1,2,18, 19,22-24
A	WO 97/33100 A (GUTEHOFFNUNGSHUETTE RADSATZ GM) 12 September 1997 (1997-09-12) abstract; figures	1
A	GB 2 027 844 A (KRUPP AG HUETTENWERKE) 27 February 1980 (1980-02-27) page 2, line 33 - line 92; figures	1
A	EP 0 816 126 A (VALDUNES) 7 January 1998 (1998-01-07) pages -; claims	1
	----- -/-	

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

26 February 2004

Date of mailing of the international search report

04/03/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax. (+31-70) 340-3016

Authorized officer

Vanneste, M

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IB 03816

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 196 20 902 A (VSG VERKEHRSTECHNIK GMBH) 18 December 1997 (1997-12-18) abstract; figures -----	1
A	US 4 392 681 A (RAQUET ERWIN) 12 July 1983 (1983-07-12) column 2, line 38 - column 4, line 11; figures -----	1,17
A	US 4 353 586 A (KLATT RICHARD ET AL) 12 October 1982 (1982-10-12) claims; figures -----	1
A	US 4 496 183 A (SCHNEIDER JUERGEN ET AL) 29 January 1985 (1985-01-29) claims; figures -----	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB 03816

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 1765477	A	24-06-1930	US	1721342 A	16-07-1929
WO 9733100	A	12-09-1997	DE	29604157 U1	10-07-1997
			AT	208470 T	15-11-2001
			WO	9733100 A1	12-09-1997
			EP	0827574 A1	11-03-1998
GB 2027844	A	27-02-1980	DE	2835020 A1	17-04-1980
			AT	367689 B	26-07-1982
			AT	527779 A	15-12-1981
			BE	878166 A1	03-12-1979
			CA	1147374 A1	31-05-1983
			CH	645441 A5	28-09-1984
			ES	483024 A1	16-04-1980
			FR	2433136 A1	07-03-1980
			JP	55025696 A	23-02-1980
			NL	7905793 A	12-02-1980
			US	4364594 A	21-12-1982
EP 0816126	A	07-01-1998	FR	2750650 A1	09-01-1998
			AT	206666 T	15-10-2001
			CZ	9701819 A3	18-02-1998
			DE	69707206 D1	15-11-2001
			DE	69707206 T2	29-05-2002
			EP	0816126 A1	07-01-1998
			ES	2163722 T3	01-02-2002
			JP	10081104 A	31-03-1998
DE 19620902	A	18-12-1997	DE	19620902 A1	18-12-1997
			AT	191685 T	15-04-2000
			CZ	9803775 A3	15-12-1999
			WO	9744204 A1	27-11-1997
			EP	0898515 A1	03-03-1999
			ES	2146998 T3	16-08-2000
US 4392681	A	12-07-1983	DE	2922585 B1	11-12-1980
			AT	1555 T	15-09-1982
			CA	1140368 A1	01-02-1983
			DE	3060846 D1	04-11-1982
			DK	236880 A	03-12-1980
			EP	0020284 A2	10-12-1980
			ES	8101223 A1	01-03-1981
			JP	56021903 A	28-02-1981
			LU	82497 A1	08-10-1980
US 4353586	A	12-10-1982	DE	2720333 A1	16-11-1978
			DE	2725177 A1	14-12-1978
			DE	2750743 A1	17-05-1979
			DE	2810568 A1	20-09-1979
			AT	364772 B	10-11-1981
			AT	328778 A	15-01-1980
			AU	515369 B2	02-04-1981
			AU	3578478 A	08-11-1979
			BE	866713 A1	01-09-1978
			BR	7802831 A	05-12-1978
			CA	1100552 A1	05-05-1981
			CH	630010 A5	28-05-1982
			DK	197778 A	07-11-1978

INTERNATIONAL SEARCH REPORT

Information on patent family members

International

PCT/IB

Application No

03816

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
US 4353586	A	ES	469511 A1	16-11-1979
		FI	781373 A ,B,	07-11-1978
		FR	2389499 A1	01-12-1978
		GB	1599434 A	07-10-1981
		JP	1215627 C	27-06-1984
		JP	54017216 A	08-02-1979
		JP	57057282 B	03-12-1982
		NL	7804861 A ,B,	08-11-1978
		NO	781590 A ,B,	07-11-1978
		SE	429946 B	10-10-1983
		SE	7805147 A	07-11-1979
US 4496183	A 29-01-1985	DE	3033246 A1	18-03-1982
		AT	11118 T	15-01-1985
		CA	1171116 A1	17-07-1984
		DE	3168144 D1	21-02-1985
		EP	0047385 A2	17-03-1982
		JP	57077201 A	14-05-1982